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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,920	12/28/2001	Juan G. Revilla	10559-566001 P12728	3816

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FISH & RICHARDSON, PC
12390 EL CAMINO REAL
SAN DIEGO, CA 92130-2081

EXAMINER

THAI, TUAN V

ART UNIT	PAPER NUMBER
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2186

DATE MAILED: 10/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/040,920

Applicant(s)

REVILLA ET AL.

Examiner

Tuan V. Thai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935-C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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Part III DETAILED ACTION

Specification

1. Claims 1-31 are presented for examination.
2. Applicant is reminded of the duty to fully disclose information under 37 CFR 1.56.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-6, 11-13 and 15-20 are rejected under 35 U.S.C. § 102(e) as being anticipated by Arimilli et al., hereinafter Arimilli (USPN: 6,405,289);

As per claims 1 and 11; Arimilli discloses the invention as

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claimed including a method comprises receiving a request for access to a memory location (e.g. see column 3, line 16 et seq.); examining a local memory descriptor associated with the memory block (e.g. see column 3, line 17), and accessing a local addressable memory in response to the local memory descriptor indicating that the memory block is in the local addressable memory is embedded in the system of Arimilli since this concept is equivalent to polling the cache (detailed on column 3, lines 17 et seq.) by comparing the tag address which yields a tag hit;

As per claim 2, Arimilli discloses accessing the memory location in response to the memory location existing in the local addressable memory (e.g. see column 3, lines 37-41);

As per claim 3, generating an illegal access violation exception in response to the memory location not existing in the local addressable memory is equivalent to MISS condition when polling L1 cache and the request being forwarded to the L1 cache (30) or higher memory in the hierarchy (e.g. see column 3, lines 17 et seq.);

As per claim 4, Arimilli discloses accessing a local cache in response to the local memory descriptor indicating that the memory block is not in the local addressable memory (e.g. see column 3, lines 17 et seq.);

As per claims 5 and 6, the further limitation of receiving request for access to a memory location comprises receiving an address and identifying a page having an address space including

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the address is embedded in the system of Arimilli, especially in cache polling or cache memory access, since address must be presented to tag unit for comparison to determined hit or miss condition (e.g. see column 3, lines 17 et seq.);

As per claim 12; Arimilli discloses accessing the local addressable memory by polling its internal L1 cache (e.g. see column 3, lines 17 et seq.);

As per claim 13; generating an illegal access violation exception in response to the memory location not existing in the local addressable memory is equivalent to MISS condition when polling L1 cache and the request being forwarded to the L1 cache (30) or higher memory in the hierarchy (e.g. see column 3, lines 17 et seq.);

As per claims 15-18 and 19-20, they encompass the same scope of invention as to that of claims 1-10 and 11-14 except that they are drafted as apparatus format rather than method format, the claims are therefore rejected for the same reasons as being set forth above.

Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences

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between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 7-10, 14 and 21-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arimilli et al., hereinafter Arimilli (USPN: 6,405,289);

As per claims 7-10, and 14; Arimilli discloses memory status/descriptor bit wherein the cache coherence protocol associates with each block in each level of the cache hierarchy, a status indicator indicating the current state of the block, the state information is used to allow certain optimizations in the coherency protocol for reducing message traffic on the generalized interconnect and the inter-cache connection (e.g. see column 4, lines 1 et seq.); in addition, referring to the MESI protocol wherein each cache memory block is associated with different block state of MESI(e.g. see column 4, lines 28 et seq.). Arimilli; however, does not particularly discloses the cache memory being implemented as SRAM type of cache memory wherein SRAM bit can be implemented as being claimed. First of all, it should be noted that SRAM is a commonly-known cache implementation; secondly, Applicant neither disclosing in the specification nor claiming in the current invention that different type of cache would change or vary the operation of

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system. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the current invention was made to implement Arimilli's cache as SRAM type of cache, since SRAM cache is known in the art as (a) for its high speed operation and (b) cheaper than most other type of memories; in addition, by implementing cache memory as SRAM type, memory refresh is not required, therefore being advantageous.

As per claims 21-27; Arimilli discloses the invention as claimed, detailed above with respect to claims 1-20 and 28-29; Arimilli however does not particularly disclose a computer-readable medium of instructions to be implemented on a computer as being claimed in claims 7-12. However, one of ordinary skill in the art would have recognized that computer readable medium (i.e., floppy, cd-rom, etc.) carrying computer-executable instructions for implementing a method, because it would facilitate the transporting and installing of the method on other systems, is generally well-known in the art. For example, a copy of the Microsoft Windows operating system can be found on a cd-rom from which Windows can be installed onto other systems, which is a lot easier than running a long cable or hand typing the software onto another system. The examiner takes Official Notice of this teaching. Therefore, it would have been obvious to put Arimilli's program on a computer readable medium, because it would facilitate the transporting, installing and implementing of Arimilli's program on other systems.

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As per claims 28-29 and 30-31; see arguments with respect to independent claims 1, 11 and 28 under 35 U.S.C. § 102(e) (paragraph 4); in addition, referring to rejection of claims 7-10 and 14 for the SRAM implementation and 21-27 for computer-readable medium concept as being detailed above.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan V. Thai whose telephone number is 703-305-3842.

The examiner can normally be reached on Monday-Thursday from 6:30 AM to 4:00 PM. The examiner can also be reached on alternate Fridays or e-mailed at **tuan.thai@uspto.gov**;

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Matthew M. Kim can be reached on (703) 305-3821. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

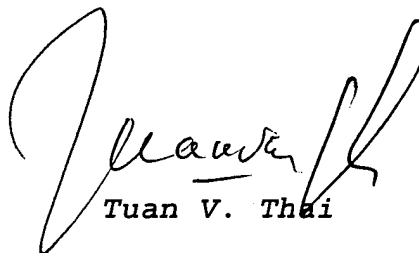
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

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TVT/October 16, 2003



Tuan V. Thai

PRIMARY EXAMINER

Group 2100